

ABSTRACT

The present invention relates to a method for improving charge/discharge cycle characteristics of a lithium secondary battery using a Si based anode active material, the method comprising surface-treating a surface of an anode current collector to have specific morphology, and preferably vapor-depositing a silicon film, as the anode active material by sputtering under application of bias voltage to the surface-treated anode current collector, and/or disposing an adhesive layer between the surface-treated anode current collector and silicon film, so as to reinforce bondability between the anode current collector and active material, ultimately leading to improvement of charge/discharge characteristics of the battery.